



SIEMENS

Ingenuity for life



Using Siemens Process Analytics to Ensure an Effective Flare Monitoring Strategy

Federal, state and local environmental regulations require you to monitor, speciate, and quantify waste gas flow to flares. Whether for refineries, gas processing, petrochemical or chemical plants, online measurement may be required to speciate constituents and determine the heat value or quantity of reactive volatile hydrocarbons and hydrogen sulfide (H₂S) or total sulfur emissions. The Siemens MAXUM edition II online and automatic process gas chromatograph provides this data continuously and with documented performance specification as part of an integrated measurement solution. Its track record of functionality over long periods of time ensures you are able to document and report accurate data to regulatory agencies.

usa.siemens.com/analyticalproducts

MAXUM edition II helps you comply with federal and state regulations that target flare emissions and emission reductions, including:

- EPA 40CFR 60 subpart J addressing H₂S in fuel gas for refinery flares;
- EPA 40 CFR 60 subpart Ja targeting Total Sulfur in flare waste gas for refinery flares;
- Chapter 115 of the Texas state TCEQ to monitor Highly Reactive Volatile Organic Compounds (HRVOC) and BTU to petrochemical plants in Houston and vicinity,
- Rule 1118 of the South Coast Air Quality Monitoring District (SCAQMD) to quantify refineries total sulfur emission,
- EPA driven Consent Agreements with individual plants, or
- EPA 40CFR 63 targeting flare combustion efficiency and flare flame visibility

While regulatory measurements are mandatory, there are tangible economical benefits to using MAXUM edition II Process Gas Chromatograph as part of your compliance strategy. By characterizing and quantifying flare gas, unknown product loss caused by leaks in shut-off or pressure relief valves can be identified and eliminated. Furthermore, characterizing flare gas and liquid recovery permits you to reuse these flows effectively.

MAXUM edition II enables you to improve community relations around plants by controlling steam injection to increase combustion efficiency and reduce unburned chemicals and visible flare smoke. It is ideal for monitoring plant-operational changes and flare-recovery systems in tough industrial environments, including hazardous areas such as refineries, chemical and petrochemical plants. The measurement system automatically performs and reports daily, weekly and quarterly validation utilizing reference standards. Furthermore, utilizing smart sample system devices not only permits continuous monitoring of proper sample delivery, it also increases confidence in the measured values, and provides information in advance when maintenance is needed.

The analyzer system management tool in turn continuously collects, aggregates and visualizes selected important performance indicators in order to indicate performance deviations early on, suggests maintenance, and therefore, increases data integrity and availability.

For more information please contact:

Siemens Industry, Inc.
5980 West Sam Houston Parkway North
Ste. 500
Houston, TX 77041
Phone: 713-939-7400
Email: ProcessAnalyticsSales.industry@siemens.com

Siemens Industry, Inc.
100 Technology Drive,
Alpharetta, GA 30005

Subject to change without prior notice
Order No.: PIAFL-00063-0816
All rights reserved
Printed in USA
© 2016 Siemens Industry, Inc.

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

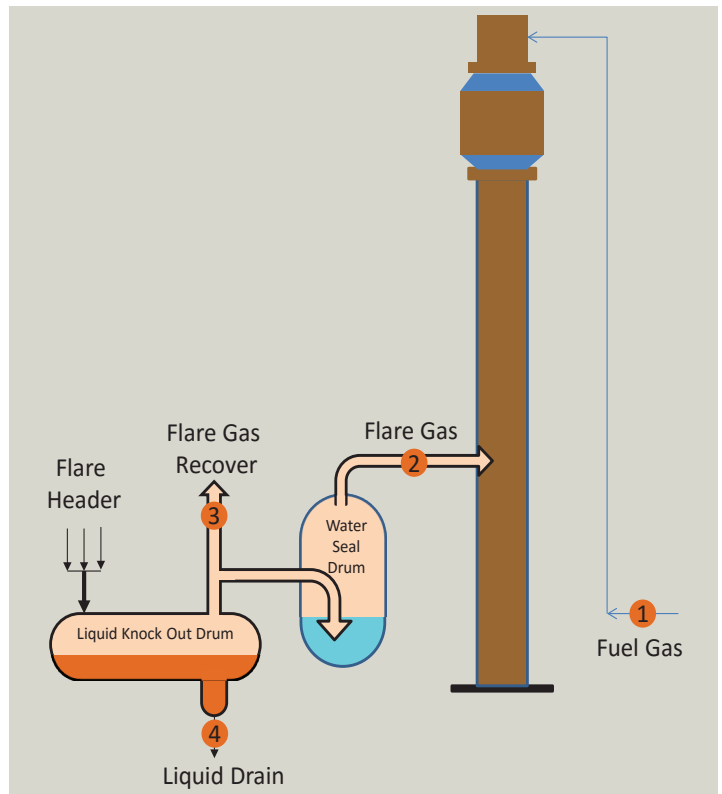


Figure 1: Flare gas monitoring

Analytical measurement is essential for generating data to demonstrate compliance with regulatory requirements. Typical measurement points are:

1. H₂S and heat value in fuel gas
2. Composition, Total Sulfur, Olefin content in Waste Gas to flare
3. Composition of flare gas recovery
4. Composition of condensate recovery.

The MAXUM measurement solution consists of:

- Sample extraction, with blowback
- Heated sample transport line, from 60 °C to 110 °C depending on gas composition and measurement requirements.
- Heated pump to ensure short sample lag time
- Sample preparation system with automatic multi-point validation and blowback capabilities, preferably with smartness to minimize maintenance where possible
- On-line process gas chromatograph, validated for specific regulatory requirements
- System integration for complete turn-key measurement solution, based on an economical standard solution or tailored to your preference
- Calculations and data communication to distributed control system or historian.
- Analyzer System Management for continuous monitoring, validating and visualizing system performance to ensure highest data availability and validity.

With hundreds of analyzers on flares, MAXUM edition II provides a proven, reliable, maintainable, and repeatable turn-key analytical flare monitoring system for satisfying the most rigorously regulatory requirement.

For specific details of the various flare solutions, please contact us.